

# **ABSTRACT OF THE DISCLOSURE**

Phase inversion microporous membranes including at least two different pore size regions are provided, wherein two membrane sheets are placed, back-to-back, such that the qualifying pore zones are positioned internally within the structure.

- 5 Exemplary membranes according to the present disclosure provide excellent thermal stability and retention characteristics. Methods for fabricating and using the disclosed membrane structures are also provided according to the present disclosure.

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